Smallpox, Smallpox Vaccine, and Planning
Questions & Answers

1. What is smallpox?

Smallpox is a contagious disease caused by the variola virus (also called the smallpox virus). Smallpox only occurred in humans and had been around for thousands of years before it was eradicated from the world in 1980.

2. What are the symptoms of smallpox?

- The first symptoms are several days of high fever, severe muscle and back aches, headache, and sometimes vomiting. This is called the prodrome.
- Next a rash of small red spots appears in the mouth that change to vesicles and then become ulcers. This is the most infectious period of illness.
- A day or two later, a red spotty rash appears on the face, arms and legs. This rash turns into bumps and then pustules and continues to spread to all parts of the body.
- The skin pustules form a crust and scab over. Usually the scabs fall off about 3 weeks after the onset of the prodrome. Deep-pitted scars remain after the scabs fall off.

3. After contact with smallpox, how long does it take to show symptoms?

After exposure, it takes from as little as 7 days to as long as 17 days for symptoms of smallpox to appear. The average period is about 2 weeks. During this incubation period, the person feels fine and is not contagious.

4. How is smallpox transmitted?

Smallpox is spread during direct and fairly prolonged face-to-face contact with someone with smallpox. The virus is transmitted by large air-borne droplets from the nose and mouth. Smallpox can also be transmitted through contaminated bedding or clothing. Rarely smallpox may be spread through air in enclosed buildings, buses, and trains. It is not spread by animals or insects.

5. How infectious is smallpox?

A person with smallpox is most infectious at the onset of spots in the mouth, but he or she remains infectious until the last scabs fall off the skin, a 3-4 week period of time. During the smallpox era, up to 80% of unvaccinated household contacts also developed smallpox.

6. What is the death rate for smallpox?

Approximately one-third of people died with the most common type of the disease, called ordinary smallpox. Rare forms of smallpox called malignant smallpox or hemorrhagic smallpox were nearly 100% fatal. Those that survive have permanent scarring and some are blind.

7. Is there treatment for smallpox?

No. At the present time there is no effective treatment for smallpox disease.

8. What the smallpox vaccine?

The smallpox vaccine is a live-virus vaccine made from the vaccinia virus. The vaccinia virus is in the "pox" virus family and closely related to the smallpox virus. The vaccine helps the body become immune to smallpox. This vaccine successfully eradicated smallpox from the world.

9. Can I get a smallpox vaccination from my health care provider?

No. Routine vaccination against smallpox stopped in 1972, after the disease was eradicated in the U.S. A stockpile of around 17 million doses of vaccine has been maintained at the U.S. Centers for Disease Control, but the vaccine has not been manufactured in the U.S. since the early 1980s. Only a few hundred scientists and medical professionals who study the "pox" viruses in the laboratory currently receive smallpox vaccination.

10. How is the smallpox vaccine given?

The smallpox vaccine is given differently than other vaccines you may have received. It is given using a bifurcated or forked (2-pronged) needle that is dipped into the vaccine solution. When removed, the needle retains a droplet of the vaccine between the prongs. Then the needle is used to quickly prick the skin 15 times in a few seconds. Extra vaccine fluid is wiped away and gauze dressing is applied over the vaccination site. The vaccination is given in the upper arm.

11. What happens after a person gets vaccinated for smallpox?

If the vaccination is successful (a vaccine "take"), a red and itchy bump develops at the vaccination site in 3 or 4 days. Over 1 week, the bump becomes a large blister, fills with pus, and begins to drain. During the second week, the blister starts to dry up and a scab forms. In the third week, the scab falls off, leaving a scar. People who are vaccinated for the first time may have a stronger "take" than those who have been vaccinated in the past.

12. If I am exposed to smallpox, is it too late to be vaccinated?

No. In fact it would be a top priority to immediately vaccinate those in contact to a person with smallpox. Vaccination within 3-4 days after exposure to a person with smallpox will completely prevent or significantly modify smallpox disease for most people. Even as late as 7 days after exposure, vaccination will probably offer protection. Post-exposure vaccination was the strategy used by the World Health Organization to eradicate smallpox worldwide.

13. Is there enough vaccine for everyone in the U.S?

Yes. Recent studies found that the current smallpox vaccine can be diluted five times and still give adequate immunity to smallpox. With the existing stockpile of vaccine, plus some additional vaccine found recently at another site, there is enough vaccine for every man, woman and child in the U.S.

14. Are there risks to vaccination against smallpox?

Yes. People with certain conditions are at higher risk for complications, and should not receive the smallpox vaccine *unless exposed to smallpox*. These conditions include:

- Anyone with a history of allergies to the vaccine or its components.

- People who have, or even once had, skin conditions, especially eczema or atopic dermatitis.
- Anyone with a weakened immune system should not get the vaccine. A weakened immune system could be due to HIV or AIDS, certain cancers, immune-suppressive medications, cancer treatment, or bone marrow or organ transplantation.
- Pregnant women should not be vaccinated because of risk of fetal infection.
- Anyone under the age of 18 should not be vaccinated.

It is important to remember that people who have face-to-face contact with a person with smallpox should be vaccinated, regardless of the conditions mentioned above. If a person is a contact to smallpox, the risk of getting smallpox becomes much greater than the risk of vaccination.

15. Is there a treatment for bad reactions to the smallpox vaccine?

Vaccinia Immune Globulin (VIG) and the drug cidofovir have shown some benefit for people with serious complications to the smallpox vaccine. There are very limited supplies of both of these products however. More VIG is being made however. Both of these drugs must be given under investigational new drug (IND) protocols because the Food and Drug Administration (FDA) has not approved them yet.

16. Since smallpox was eradicated in 1980, why are we concerned about this disease today?

After the events of September and October 2002, the U.S. government is taking precautions to be ready to deal with a bioterrorist attack using smallpox as a weapon. We understand that there is no conclusive proof that terrorists have weaponized smallpox, however credible source believe the possibility exists. As a result, of these efforts:

1) There is a detailed nationwide smallpox response plan designed to quickly vaccinate people and contain a smallpox outbreak; and
2) There is enough smallpox vaccine to vaccinate everyone who would need it in the event of an emergency.

17. What is Alaska doing to protect its citizens against smallpox as an agent for bioterrorism?

All of the states are working with the U.S. Centers for Disease Control (CDC) to develop state-specific smallpox plans. Alaska's smallpox plan will address the unique challenges of our state. The Alaska smallpox plan includes steps to:

1) Vaccinate ***Smallpox Public Health Response Teams*** and ***Smallpox Health Care Response Teams*** that will give the state the capacity to rapidly provide mass vaccination and to care for possible smallpox patients.
2) Request and receive smallpox vaccine to rapidly vaccinate *all* people in Alaska within 10 days or less.

The Alaska Division of Public Health has been working closely with many partners during the development of these plans.

18. What will the Alaska smallpox teams do and who will staff them?

Members of ***Smallpox Public Health Response Teams*** will investigate and evaluate any patient suspected of having smallpox. These teams will also initiate infection control measures in the community and the state, should smallpox be confirmed. The members of these teams will also be trained to give smallpox vaccine to contacts to a case of smallpox and other members of the community, as needed. Public Health Response Teams will include a medical expert as team leader, at least one public health operations specialist, medical and nurse epidemiologists, disease investigators, diagnostic laboratory scientists, public health nurses, and other necessary personnel. The U.S. Centers for Disease Control and Prevention recommends that every state have at least one such team.

Members of ***Smallpox Health Care Response Teams*** will health care professionals in hospitals who will be the most likely to evaluate, treat, and care for cases of smallpox. These people will be clinical and non-clinical personnel who are most likely to have prolonged exposure to smallpox in the process of caring for a patient. Smallpox Health Care Response Teams may include emergency room staff, intensive care unit staff, general medical staff (internal medicine, pediatrics, obstetrics and family medicine physicians), infectious disease and other specialists, dermatologists, surgeons, nurses, respiratory therapists, radiology staff, security, and housekeeping personnel.

The U.S. Department of Health and Human Services and the U.S. Centers for Disease Control and Prevention (CDC) will continue to advise and assist states in the development of these teams.

19. Who will determine and select the people to serve on these teams?

The Alaska Division of Public Health (ADPH) is currently developing the composition and staffing of ***Smallpox Public Health Response Teams***. State officials – working closely with local health departments – are deciding who should serve on these teams. Members of the Teams will receive the smallpox vaccine. Participation on a Public Health Response Team and the receipt of smallpox vaccination is voluntary.

The ADPH is also working with Alaska hospitals to designate ***Smallpox Health Care Response Teams***. Each hospital has been asked to determine who should be on their Health Care Response Team, the Team's structure to provide a 24-hour staffing capacity. Each Health Care Response Team should be developed to best serve the needs of the local communities. Alaska Regional Hospital will implement the first Healthcare Response Team.

20. What criteria will Alaska use to determine who should receive smallpox vaccine?

The ADPH is working with hospitals to identify the appropriate personnel to be vaccinated. The goal is to vaccinate those people who would be most likely to respond to the first cases of smallpox, and those people who could begin giving smallpox vaccinations in an emergency.

21. What happens if a healthcare worker does not want to be vaccinated prior to an outbreak? Will vaccinations be mandatory?

The federal pre-event smallpox vaccination program is completely voluntary. There is no indication that this will become a mandatory program.

22. Is there federal guidance to help states through this process?

Yes. The CDC has sent a number of guidance materials to the states to help them develop plans for implementing this policy, as well as for responding to a smallpox outbreak.

23. Will there be federal review of the Alaska Pre-Event Smallpox Response Plan?

The CDC will be reviewing all the state plans—both those related to this policy, as well as state plans for responding to a smallpox case or outbreak. One of CDC's responsibilities is to work with states to provide them the assistance and training they need to effectively develop and establish smallpox vaccination and response programs.

24. Will individuals be screened to see if they fall into higher risk categories for adverse events? How will this take place?

One of our highest priorities is to minimize adverse reactions to smallpox vaccination. We have established preliminary screening guidelines, and will encouraging people to be confidentially tested for HIV, pregnancy, or any of the other conditions that put people at higher risk for adverse reactions to this vaccine.

Effective smallpox vaccine screening practices will be essential to keep serious vaccine side effect to a minimum. People who are thinking about being vaccinated to participate on either the Public Health or the Health Care Smallpox Response Teams will be well educated about the contraindications to smallpox vaccine. Screening and educational material about risk factors are being developed to help people correctly choose to be or not be vaccinated.